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ABSTRACT

This study was designed to determine the status of in-service teacher training programs for lower secondary science teachers in Japan. The investigation involved measuring the percentage of science teachers attending in-service training sessions on pure science fields, science teaching, and the use of audio-visual aids. In addition, science teachers were categorized according to different teaching experiences, age, geographic location, and the type of undergraduate department where they received their initial training. The results indicate that: (1) most secondary science teachers have 20 or more years of experience; (2) there are more younger science teachers in large cities than in small cities and rural areas; (3) most science teachers received their undergraduate training in a teacher training system (TTS); (4) the most popular (measured in terms of attendance) in-service training programs related to science teaching; and (5) the least popular in-service training program for science teachers related to the use of audio-visual aids. (TW)

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Japan-U.S. Seminar on Science Education

The Status of In-Service Training Programs For Lower Secondary Science Teachers in Japan

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The Status of In-Service Training Programs

for Lower Secondary Teachers in Japan

PURPOSE

I would like to find out the status of in-service training programs for lower secondary science teachers in Japan. The research points are the following:

A. Percentage of lower secondary science teachers according to teaching experience, age, cities, different departments.

B. Percentage of attendance to the in-service training for pure science fields, science teaching, A.V. aides.

METHOD:

I cooperated with some selected lower secondary science teachers in the construction of the questionnaire. This research was funded by a science text publisher. It was this publisher that took care of the direct distribution of the questionnaire to different lower secondary science teachers. The publisher returned the completed questionnarie to me. The answers were analyzed with the use of computer.

The research period was from 1984 to 1985.

RESULTS:

I got results in the following two research points.

A. Percentage of lower secondary science teachers in different teaching experience, age, cities, departments.

1. The percentages of lower secondary science teachers with teaching experience in years are shown in Figure 1. Nine years and below is 20 percent. From ten years to 19 years is 28 percent, and 20 years and more is 52 percent.

2. The percentages of lower science teachers in different types of cities are shown in Figure 2. Cities such as Tokyo, Osaka, Kobe, Yokohama, etc., (total of nine cities) is 33 percent. Respective prefecture capital is 38 percent. Small cities with a population of not more than two hundred thousand is 29 percent.

3. The percentages of lower secondary science teachers years in different type cities are shown in Figure 3. There are much younger science teachers in larger cities than in a prefecture capital or a small city. In the metropolis, there are less middle-aged science teachers compared to the capital or a small city. Therefore, there is a concentration of young teachers in the city; on the other hand, middle aged teachers flock to the prefectural capital and small city.

4. The percentages of lower secondary teachers based on their undergraduate departments are shown in Figure 4. T.T.S. (Teacher Training System) reflects 65 percent. Non-T.T.S. (Non-Teacher Training System) reflects 35 percent. These Non-T.T.S. are the following:

   Department of science is 14 percent.

Department of agriculture is 15 percent.

Department of technology is 6 percent.

Therefore, most of the lower secondary science teachers had their training in T.T.S.

B. The percentage of in-service training programs for pure science fields, science teaching, A.V. aides.

1. The percentage of in-service training programs for pure science fields such as physics, chemistry, and biology, are shown in Figure 5. Only half of them attended these training programs. The percentages based on the frequency of attendance is as follows:

   42 percent attended once

   27 percent attended twice

   20 percent attended three times

2. The percentage of in-service training programs for science teaching such as teaching method, teaching content, and conventions of different professional associations, are shown in Figure 6. Teachers attending these programs account for 72 percent. Teachers not attending this program account for 28 percent. Percentages based on the frequency of attendance are as follows:

   39 percent attended once

   27 percent attended twice

   18 percent attended three times

3. The percentage of in-service training programs for laboratory work using experimental materials is shown in Figure 7. Teachers attending this program account for 54 percent. Teachers not attending this

program account for 46 percent. The percentages based on the frequency of attendance are as follows:

48 percent attended once

27 percent attended twice

11 percent attended three times

4. The percentages of in-service training programs for audio visual aides are shown in Figure 8. Teachers attending this program account for 37 percent. Teachers not attending this program account for 63 percent. The percentage is based on the frequency of attendance is as follows:

57 percent attended once

22 percent attended twice

13 percent attended three times.

Therefore, the most popular training program is the science teaching, and the least popular is the audio visual aides program. About half of lower secondary science teachers attend the training program for pure science and/or laboratory work.

Passing Rate Mean by Grade, Field, Area and Objective
(Lower Secondary School)

Subject	Items	1st Year	2nd Year	3rd Year
Japanse Language	Total	72.1 %	69.6 %	65.7 %
	Expression	69.4	62.2	55.7
	Understanding	68.0	67.9	64.2
	Literature	67.4	61.1	68.8
	Explanation	68.5	74.7	60.2
	Linguistics	75.9	71.9	67.9
Social Studies	Total	58.5	56.9	64.5
	Content Field			
	Geography	56.7	57.8	-
	History	61.6	56.6	-
	Linkage of Georaphy/History	54.9	54.4	-
	Civics	-	-	65.3
	Objective Evaluation Point			
	Knowledge/Understanding	60.1	57.0	65.5
	Ability to Use Data	53.6	57.8	63.3
	Social Thinking/Judgment	60.5	56.0	62.5
Mathematics	Total	60.3	62.1	70.7
	Content Field			
	Number/Algebraic Expression	60.3	63.3	73.1
	Function	63.1	61.2	63.3
	Geometrical Figures	58.0	61.3	67.7
	Probability & Statistics	-	-	69.1
	Objective Evaluation Point			
	Knowledge/Understanding	66.0	65.8	69.9
	Skills in Mathematics	58.8	62.0	71.4
	Thinking in Mathematics	48.7	58.5	62.2
Science	Total	67.4	62.7	70.1
	Content Area			
	Physics	64.2	58.6	69.0
	Chemistry	73.1	69.0	67.9
	Biology	68.3	62.1	68.2
	Earth Science	63.2	61.1	75.2
	Objective Evaluation Point			
	Knowledge/Understanding	71.1	64.1	68.5
	Observation/Experiment Skill	74.6	68.7	75.0
	Scientific Thinking	59.7	57.7	70.8
Foreign Language (English)	Total	73.0	56.8	63.3
	Listening	-	-	54.9
	Reading	78.7	65.6	66.6
	Writing	53.1	40.9	32.7
	Appreciation	65.3	58.9	72.4

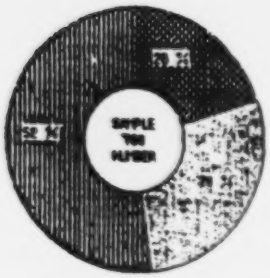


FIG. 1

FIG. 2

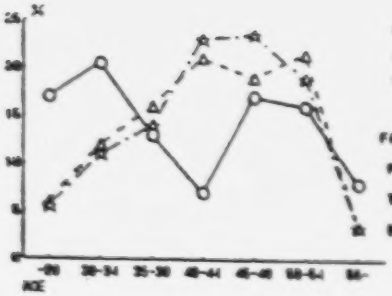
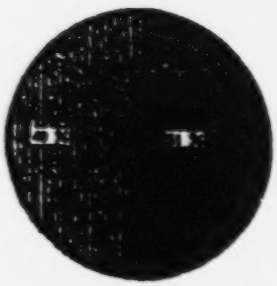


FIG. 3

FIG. 4



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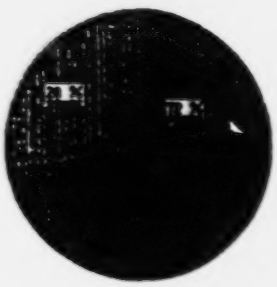

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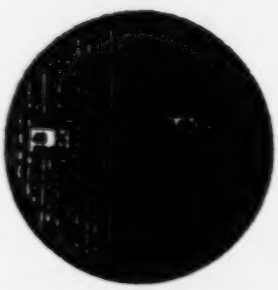

FIG. 7

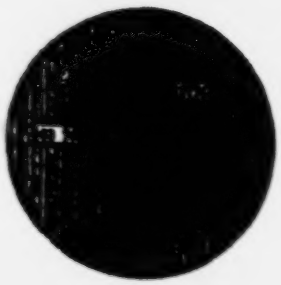

FIG. 8

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